

Ambient Light Sensor

Datasheet

Stock#	Description
ALS1-SENS-TP-AS	Ambient Light Sensor

Description

Ambient Light Sensor (ALS) is part of a versatile EIP (Environmental Interface Peripherals) family, and it accurately measures the room's lighting level by automatically adjusting its brightness. Through NuLEDs™ PoE Integration, ALS offers efficient daylight harvesting that helps save on energy and cost. This sustainable option enhances occupant's comfort by seamlessly integrating with NuLEDs™ intelligent lighting management systems.

Through NuLEDs™ PoE lighting integration, artificial lights will automatically adjust their brightness level or switch off when ample natural light is available. This intelligent approach reduces unnecessary lighting and maximizes energy savings while providing nuanced control over lighting levels based on the amount of natural light present. The result is a consistently comfortable and well-lit environment, with minimal reliance on artificial lighting during daylight hours. This saves you money on energy bills and supports green building initiatives and certifications.

This incredible sensor seamlessly connects to SPICEbox™ via its IP address, allowing users to easily manage NuSPICE™ loads with customized light-level events, scenes, and fade times. Additionally, ALS can be personalized through user-friendly NuPAC and APPIO programming capabilities, taking the PoE lighting game to the next level.

Overall, ALS offers a cost-effective and sustainable lighting solution with fast and easy installation through CAT5 cable. It can positively impact occupant's mood, productivity, and overall well-being.



Features

- **Optimized Energy Efficiency:** Detects natural light levels and maximize energy savings by reducing artificial light usage during daylight hours.
- **Sustainability and Green Building Compliance:** Environment friendly product and adheres to green building standards by leveraging natural light by utilizing ALS for daylight harvesting
- **Easy to Install and Manage:** Powering the system through Cat5 cables is effortless, ensuring you can set up the system quickly and efficiently.
- **Customizable and Scalable:** Customizable lighting system that can be managed to meet maximum system performance requirements.

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Specifications

Equipment Kit	
Ambient Light Sensor, Installation Guide	
Hardware	
Standby Power	0.5 Watts
Power Supply	SPICEbox™ PoE
Input Power	NULINK™ Bus
Input Voltage	5VDC
RJ45 Ports	2 X RJ45 ports connecting to SPICEbox™ (Only need to plug-in one)
Protocols	NuSPICE™, CoAP
Control Interface	NuLEDs™ NuPAC NuLEDs™ APPIO
Wiring	CAT5e or CAT6 Ethernet Cable (328 ft. (100 m.)
Maximum Wiring Length	50 ft. low baud rate and no terminations
Mechanical	
Dimensions (L X W X D)	1.00 in. (25.40 mm) x 2.00 in. (50.80 mm) x 2.500 in. (63.50 mm)
Weight	27 gm.
Mounting	Wall or surface mounted. Cut-in 2.25" Hole with torsion springs.
Dimming	Programmable with NuSPICE™
Environmental	
Operating Temperature	32° to 104°F (0° to 40°C) ambient
Humidity	10-80% Non-Condensing
Agency Listings and Compliance	
UL Listed UL60950-1 (As SPICEbox™ accessory)	
FCC Class A Compliant	
CE Compliant	
RoHS	

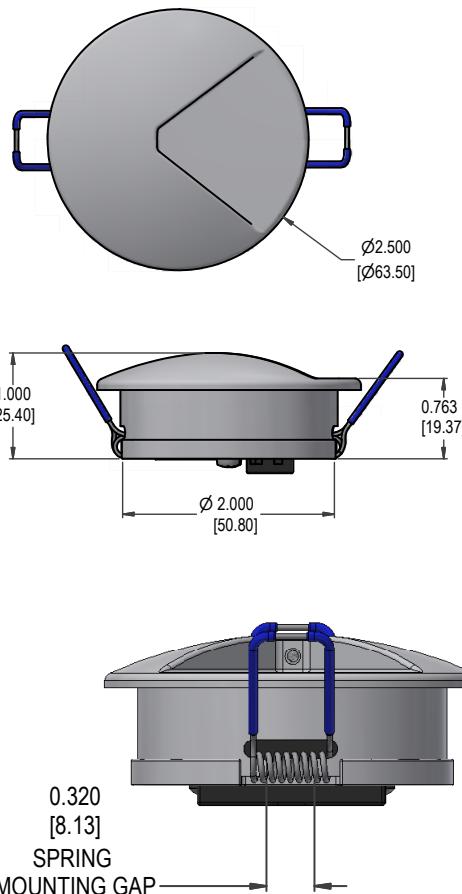
⚠ Warning

- **Caution** - Observe precautions for handling electrostatic sensitive devices.
- Case to the SPICEbox™ should not be earth grounded.
- Do not use outdoors.
- **Warning** - Risk of Electric Shock. Do not handle energized module with wet hands or when standing on wet or damp surfaces.
- Use only with Class 2 Power Unit - 60VDC maximum.
- Conforms to CE, FCC standards
- **Warranty** - Voided if device has been modified from its original configuration.

Mounting and Dimensions

1. Cut-in 2.25" Hole with torsion springs.
2. Mount it on a wall or flat-surface.

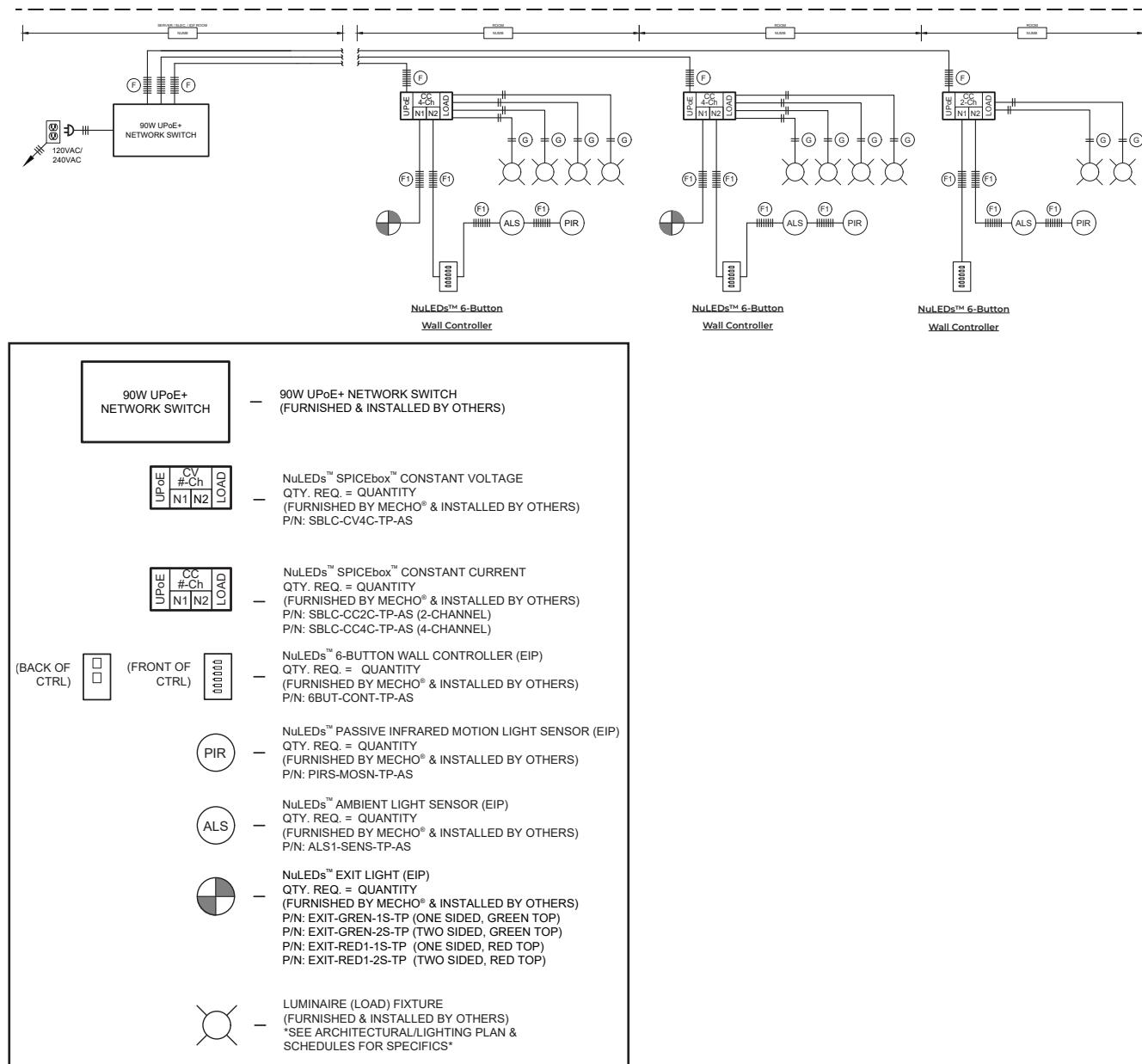
 **Caution:** Please be aware that when mounting SPICEbox™ to metal surfaces or pockets, the gateway must be isolated from possible earth or building electrical grounding and other gateways.



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NuLINK™ Network Wiring Diagram - Constant Current

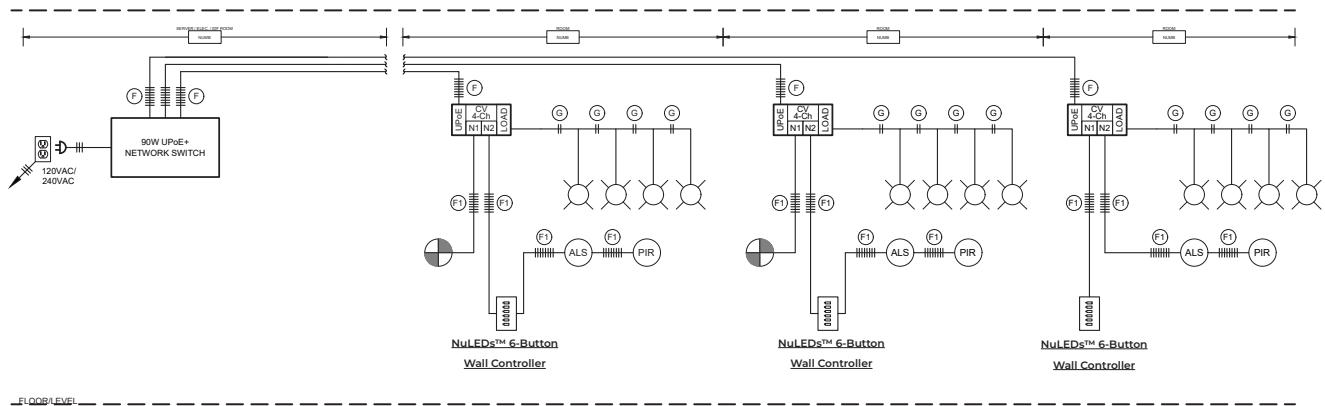


NOTE: Refer to page 11 for the Low Voltage Cable Legend and Crimping Instructions.

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NuLINK™ Network Wiring Diagram - Constant Voltage



EQUIPMENT KEY FOR NuLEDs/NuLINK SYSTEM

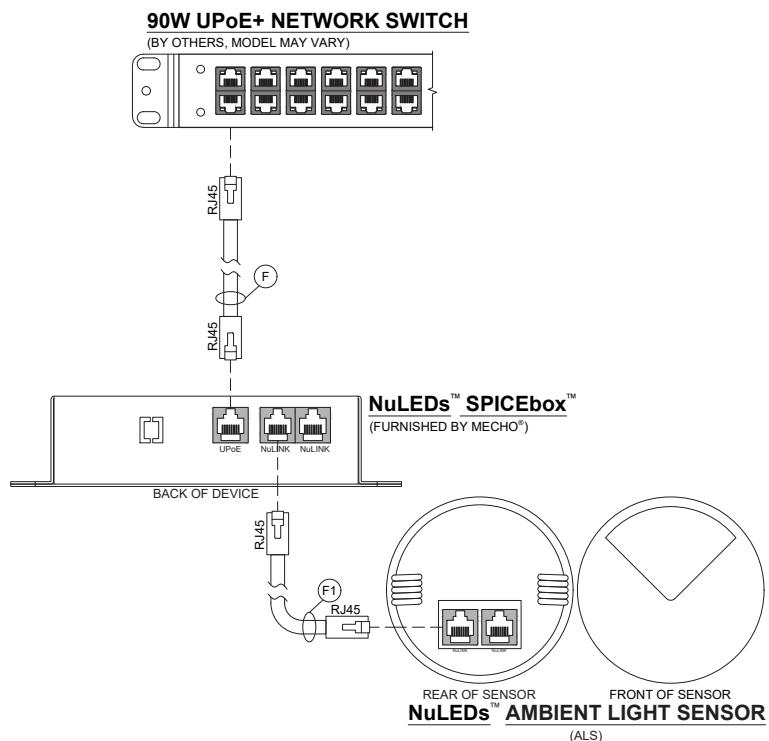
	— 90W UPoE+ NETWORK SWITCH (FURNISHED & INSTALLED BY OTHERS)
	— NuLEDs™ SPICEbox™ CONSTANT VOLTAGE QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: SBLC-CV4C-TP-AS
	— NuLEDs™ SPICEbox™ CONSTANT CURRENT QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: SBLC-CC2C-TP-AS (2-CHANNEL) P/N: SBLC-CC4C-TP-AS (4-CHANNEL)
	— NuLEDs™ 6-BUTTON WALL CONTROLLER (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: 6BUT-CONT-TP-AS
	— NuLEDs™ PASSIVE INFRARED MOTION LIGHT SENSOR (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: PIR-MOSN-TP-AS
	— NuLEDs™ AMBIENT LIGHT SENSOR (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: ALS1-SENS-TP-AS
	— NuLEDs™ EXIT LIGHT (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: EXIT-GREEN-1S-TP (ONE SIDED, GREEN TOP) P/N: EXIT-GREEN-2S-TP (TWO SIDED, GREEN TOP) P/N: EXIT-RED1-1S-TP (ONE SIDED, RED TOP) P/N: EXIT-RED1-2S-TP (TWO SIDED, RED TOP)
	— LUMINAIRE (LOAD) FIXTURE (FURNISHED & INSTALLED BY OTHERS) *SEE ARCHITECTURAL/LIGHTING PLAN & SCHEDULES FOR SPECIFICS*

NOTE: Refer to page 11 for the Low Voltage Cable Legend and Crimping Instructions.

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Point-to-Point Diagram - ALS PoE Integration & NuLINK™ Network

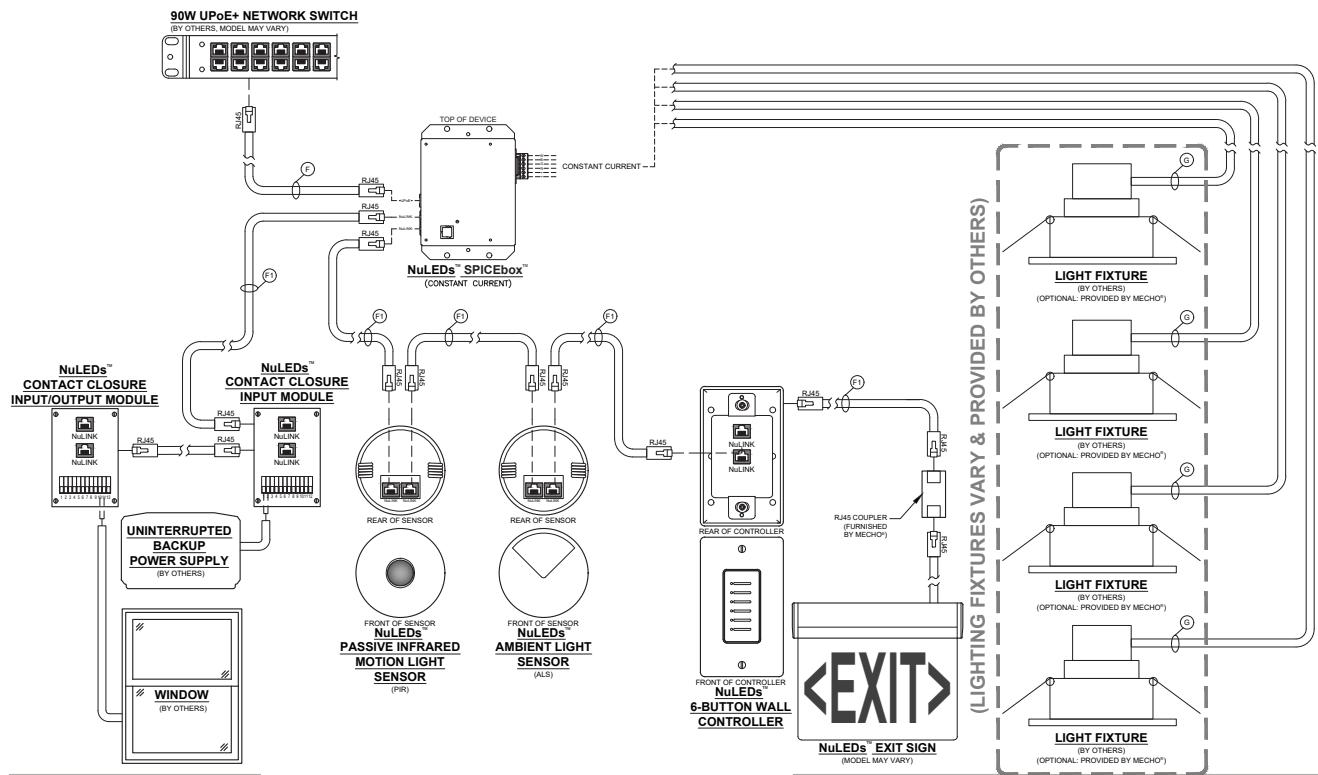


NOTE: Refer to page 11 for the Low Voltage Cable Legend and Crimping Instructions.

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Point-to-Point Diagram



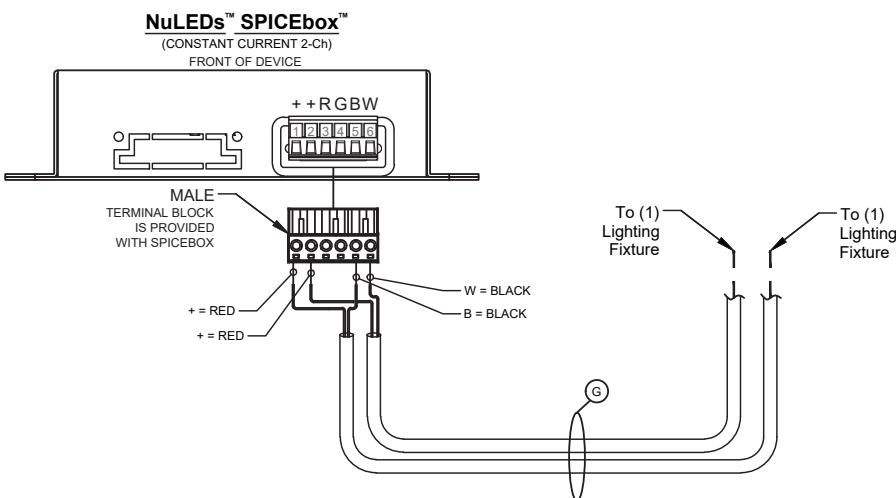
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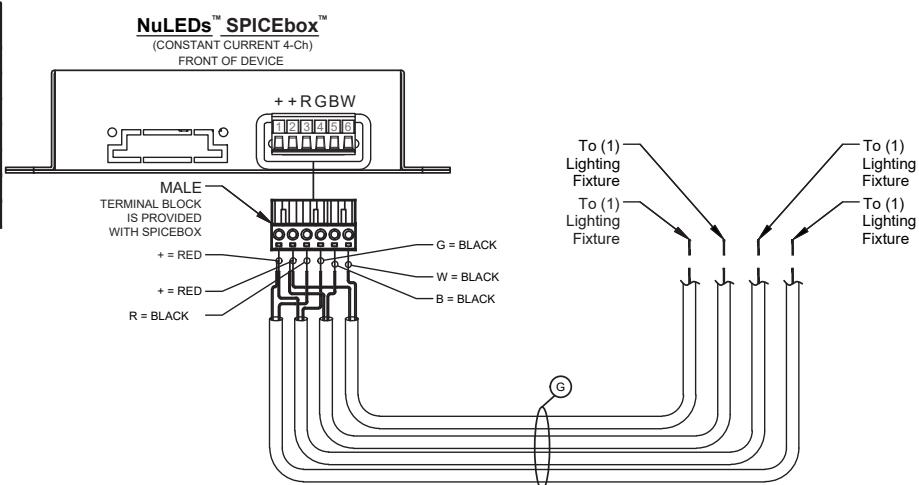
Point-to-Point Diagram - Constant Current 2 Channel Port Connections

SPICEBOX LOAD PORT WIRING PIN OUT		
PIN#	FUNCTION	PIN#
1	POWER (+)	1
2	POWER (+)	2
3	R CHANNEL	3
4	G CHANNEL	4
5	B CHANNEL	5
6	W CHANNEL	6



Point-to-Point Diagram - Constant Current 4 Channel Port Connections

SPICEBOX LOAD PORT WIRING PIN OUT		
PIN#	FUNCTION	PIN#
1	POWER (+)	1
2	POWER (+)	2
3	R CHANNEL	3
4	G CHANNEL	4
5	B CHANNEL	5
6	W CHANNEL	6



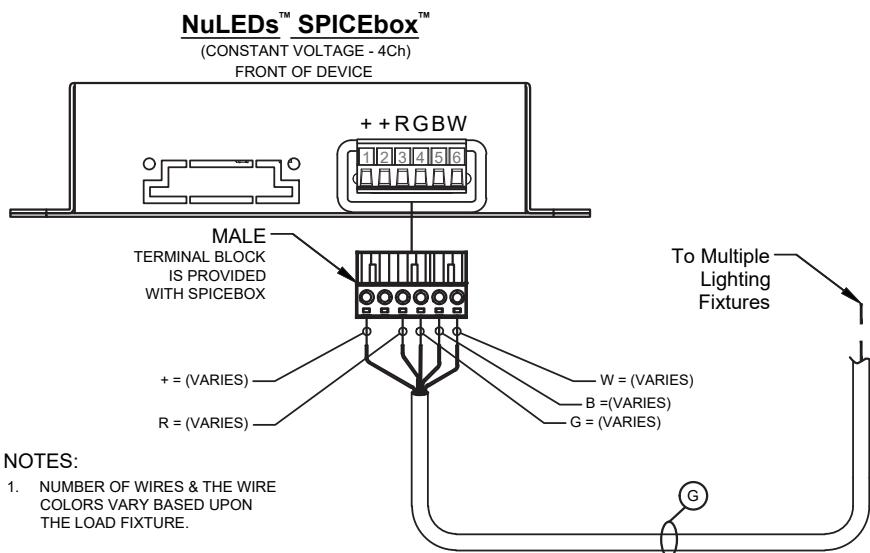
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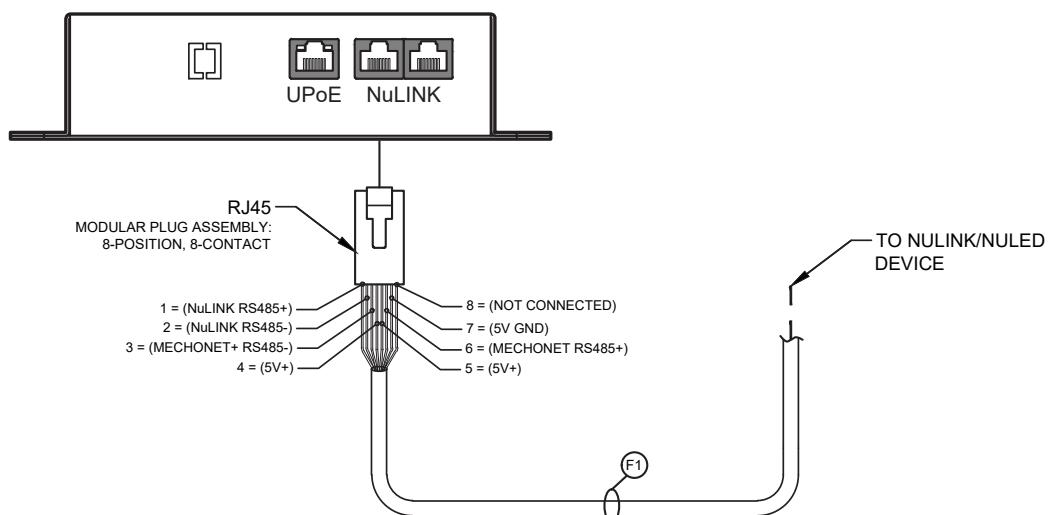
Point-to-Point Diagram - Constant Voltage Port Connections

SPICEBOX LOAD PORT WIRING PIN OUT		
PIN#	FUNCTION	PIN#
1	POWER (+)	1
2	POWER (+)	2
3	R CHANNEL	3
4	G CHANNEL	4
5	B CHANNEL	5
6	W CHANNEL	6



NuLINK MECHONET+ (RS485) PINOUT			
CABLE TYPE: CAT5/CAT5e/CAT6			
CATX CRIMP	PIN#:	WIRE COLOR:	FUNCTION:
• 1	ORANGE/WHITE STRIPE	NuLINK RS485+	
2	ORANGE SOLID	NuLINK RS485-	
3	GREEN/WHITE STRIPE	MECHONET+ RS485-	
4	BLUE SOLID	5V+	
5	BLUE/WHITE STRIPE	5V+	
6	GREEN SOLID	MECHONET RS485+	
7	BROWN/WHITE STRIPE	5V GND	
8	BROWN SOLID	N/C	

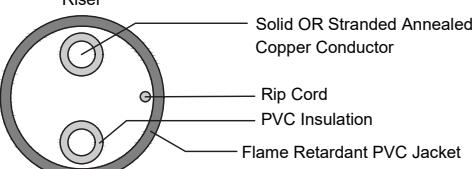
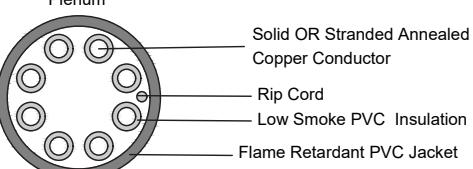
Point-to-Point Diagram - NuLINK Port Connections



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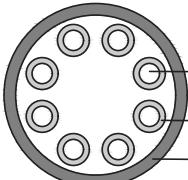
Cable Reference Drawing

CABLE G REFERENCE DRAWING							
 <p>Drawing not to scale</p>				 <p>Drawing not to scale</p>			
SPECIFICATIONS:							
CONDUCTOR COUNT: 2 THRU 12 CONDUCTORS				PERFORMANCE COMPLIANCE: NEC ARTICLE 725 NEC ARTICLE 800 NEC ARTICLE 760 UL®13 CL3R/CL3P UL 444 CMR/CMP* UL 1424 FPLR/FPLP UL 1666 NFPA 262 CALIFORNIA STATE FIRE MARSHALL RoHS-COMPLIANT/RoHS 2-COMPLIANT			
CONDUCTOR: FULLY ANNEALED, SOLID OR STRANDED BARE COPPER				NRTL PROGRAMS: UL LISTED CL3R, CMR, FPLR UL LISTEN CL3P, CMP, FPLP			
AWG (mm): 18 (1.16)							
INSULATION: LOW SMOKE PVC							
INSULATION COLORS: CONDUCTOR 1: BLACK CONDUCTOR 2: RED CONDUCTOR 3: WHITE CONDUCTOR 4: GREEN CONDUCTOR 5: BROWN CONDUCTOR 6: BLUE CONDUCTOR 7: ORANGE CONDUCTOR 8: YELLOW CONDUCTOR 9: VIOLET CONDUCTOR 10: GRAY CONDUCTOR 11: PINK CONDUCTOR 12: TAN							
JACKET: RISER: GRAY, FLAME RETARDANT (FR) PVC PLENUM: WHITE, LOW SMOKE PVC							
PACKAGE: BLACK, RIBBED, PLASTIC RECYCLABLE SPOOL, REEL-IN-A-BOX OR WOOD REEL							
Part Numbers and Physical Characteristics:							
Listing	Part Number ¹	Conductor Count	AWG (mm)	Conductor Type	Jacket Color ²	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)
CL3R/CMR/FPLR	2F-C1x-31	2	18 (1.16)	7 x 26 AWG	GRAY	0.16 (4.1)	17 (25)
CL3R/CMR/FPLR	2F-C2x-31	3	18 (1.16)	7 x 26 AWG	GRAY	0.17 (4.3)	22 (9)
CL3R/CMR/FPLR	2F-C3x-31	4	18 (1.16)	7 x 26 AWG	GRAY	0.19 (4.8)	30 (45)
CL3R/CMR/FPLR	2F-C4x-31	6	18 (1.16)	7 x 26 AWG	GRAY	0.23 (5.8)	43 (64)
CL3R/CMR/FPLR	2F-C5x-31	8	18 (1.16)	7 x 26 AWG	GRAY	0.25 (6.4)	56 (83)
CL3R/CMR/FPLR	2F-C7x-31	12	18 (1.16)	7 x 26 AWG	GRAY	0.30 (7.6)	83 (124)
CL3P/CMP/FPLP	2F-C1x-43	2	18 (1.16)	7 x 26 AWG	WHITE	0.16 (4.1)	17 (25)
CL3P/CMP/FPLP	2F-C2x-43	3	18 (1.16)	7 x 26 AWG	WHITE	0.17 (4.3)	22 (9)
CL3P/CMP/FPLP	2F-C3x-43	4	18 (1.16)	7 x 26 AWG	WHITE	0.19 (4.8)	30 (45)
CL3P/CMP/FPLP	2F-C4x-43	6	18 (1.16)	7 x 26 AWG	WHITE	0.23 (5.8)	44 (65)
CL3P/CMP/FPLP	2F-C5x-43	8	18 (1.16)	7 x 26 AWG	WHITE	0.25 (6.4)	57 (85)
CL3P/CMP/FPLP	2F-C7x-43	12	18 (1.16)	7 x 26 AWG	WHITE	0.30 (7.6)	85 (126)
Packaging Options:							
		Plastic Spool		Reel-in-a-Box		Wood Reel	Shrink Wrap
		1,000'	500'	1,000'	500'	1,000'	250'
'Replace "x" with:		2	3	4	5	6	7
							8

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Cable Reference Drawing

CABLE F REFERENCE DRAWING																	
 Drawing not to scale																	
<p>SUPERIOR ESSEX (www.superioressex.com) PART No. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM)</p>																	
<p>SPECIFICATIONS (SOLID): CATEGORY 5E+</p>																	
PAIR COUNT:	4	SOLID ANNEALED COPPER															
CONDUCTOR:																	
AWG (mm):	22 (0.51)																
INSULATION:		CMR: POLYOLEFIN															
		CMP: FEP															
INSULATION COLORS:		PAIR 1: COLORTIP LIGHT BLUE, BLUE															
		PAIR 2: COLORTIP LIGHT ORANGE, ORANGE															
		PAIR 3: COLORTIP LIGHT GREEN, GREEN															
		PAIR 4: COLORTIP LIGHT BROWN, BROWN															
JACKET:		CMR: FLAME RETARDANT (FR) PVC															
		CMP: FR, LOW SMOKE PVC															
CHARACTERISTIC IMPEDANCE Ohms:	100 ± 15	NRTL PROGRAMS:	UL Verified CAT 5e														
NOMINAL VELOCITY OF PROPAGATION %:	CMR: 71		UL, c(UL) Listed CMR														
	CMP: 74		UL, c(UL) Listed CMP														
PERFORMANCE COMPLIANCE:	UL 444		HDBaseT Certified														
	CSA C22.2 No. 214-08		UL Certified EPD														
	UL 1666		HPD														
	NFPA 262		USGBC® Member														
	ANSI/TIA-568-C.2		RoHS-compliant/RoHS 2-compliant														
	ANSI/ICEA S-90-661-2012		REACH-compliant														
	Article 800, NEC (NFPA 70)		Temperature cable rating: 75°C														
	HDBaseT Class A and B		for CMR and 90°C for CMP														
PART NUMBERS AND PHYSICAL CHARACTERISTICS																	
Listing	Part Number ¹	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)	Package	Packages per Pallet												
CMR	PW52-H46-x5	0.23 (4.6)	28 (25)	1,000 ft BrakeBox®	12												
CMR	PW52-H72-x5	0.23 (4.6)	28 (25)	1,000 ft Plywood Reel	16												
CMP	PW52-H46-x8	0.23 (4.8)	37 (28)	1,000 ft BrakeBox	12												
CMP	PW52-H72-x8	0.23 (4.8)	37 (28)	1,000 ft Plywood Reel	16												
JACKET COLORS																	
<table border="1"><tr><td>Replace "x" with:</td><td>Blue = 2</td><td>Gray = 3</td><td>White = 4</td><td>Green = 5</td><td></td></tr><tr><td>Yellow = 6</td><td>Purple = 7</td><td>Red = 9</td><td>Black = E</td><td></td><td></td></tr></table>						Replace "x" with:	Blue = 2	Gray = 3	White = 4	Green = 5		Yellow = 6	Purple = 7	Red = 9	Black = E		
Replace "x" with:	Blue = 2	Gray = 3	White = 4	Green = 5													
Yellow = 6	Purple = 7	Red = 9	Black = E														

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Low Voltage Cable Legend and Crimping Instructions

LOW VOLTAGE CABLE LEGEND - EIA568B	
NOTES:	
(F)	<p>CAT5E+ - CABLE FOR UPOE NETWORK WIRING CONNECTIONS: SPECIFICATION: 22AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM) PART NO. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM) OR COMPATIBLE CABLE</p> <p>DISTANCE LIMITATION: 328'. MAX. NODES: 1 SEE "CABLE F" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
(F1)	<p>CAT5E+ - CABLE FOR NuLED NETWORK WIRING CONNECTIONS: SPECIFICATION: 22AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM) PART NO. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM) OR COMPATIBLE CABLE</p> <p>DISTANCE LIMITATION: 50'. MAX. EIPS: 15 SEE CABLE "F" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
(G)	<p>CABLE FOR SPICEBOX TO LIGHT (LOAD) FIXTURE WIRING CONNECTIONS: SPECIFICATION: 2 TO 12-CONDUCTOR, (18AWG UNSHIELDED) RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM 1-800-551-8948) LISTING NO. CL3R/CMR/FPLR (NON-PLENUM), & CL3P/CMP/FPLP (PLENUM)</p> <p>DISTANCE LIMITATION: VARIES PER LOAD. MAX. LOADS: VARIES BY WATTS SEE CABLE "G" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>

EIA 568B CRIMPING - 8 CONDUCTOR CABLE																													
UPOE CONNECTIONS ON UPOE NETWORK																													
MODULAR PLUG ASSEMBLY: RJ45, 8-POSITION, 8-CONTACT	CABLE TYPE: CAT5/CAT5e/CAT6																												
	<table border="1"><thead><tr><th>PIN#:</th><th>WIRE COLOR:</th><th>FUNCTION:</th></tr></thead><tbody><tr><td>1</td><td>ORANGE/WHITE STRIPE</td><td>DATA A+/POWER-</td></tr><tr><td>2</td><td>ORANGE SOLID</td><td>DATA A-/POWER+</td></tr><tr><td>3</td><td>GREEN/WHITE STRIPE</td><td>DATA B+/POWER+</td></tr><tr><td>4</td><td>BLUE SOLID</td><td>DATA C+/POWER+</td></tr><tr><td>5</td><td>BLUE/WHITE STRIPE</td><td>DATA C-/POWER+</td></tr><tr><td>6</td><td>GREEN SOLID</td><td>DATA B-/POWER+</td></tr><tr><td>7</td><td>BROWN/WHITE STRIPE</td><td>DATA D+/POWER-</td></tr><tr><td>8</td><td>BROWN SOLID</td><td>DATA D-/POWER-</td></tr></tbody></table>	PIN#:	WIRE COLOR:	FUNCTION:	1	ORANGE/WHITE STRIPE	DATA A+/POWER-	2	ORANGE SOLID	DATA A-/POWER+	3	GREEN/WHITE STRIPE	DATA B+/POWER+	4	BLUE SOLID	DATA C+/POWER+	5	BLUE/WHITE STRIPE	DATA C-/POWER+	6	GREEN SOLID	DATA B-/POWER+	7	BROWN/WHITE STRIPE	DATA D+/POWER-	8	BROWN SOLID	DATA D-/POWER-	
PIN#:	WIRE COLOR:	FUNCTION:																											
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7	BROWN/WHITE STRIPE	DATA D+/POWER-																											
8	BROWN SOLID	DATA D-/POWER-																											
EIA 568B CRIMPING - 8 CONDUCTOR CABLE																													
NuLED CONNECTIONS ON MECHONET+ (RS485) NETWORK																													
MODULAR PLUG ASSEMBLY: RJ45, 8-POSITION, 8-CONTACT	CABLE TYPE: CAT5/CAT5e/CAT6																												
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PIN#:	WIRE COLOR:	FUNCTION:																											
1	ORANGE/WHITE STRIPE	NuLINK RS485+																											
2	ORANGE SOLID	NuLINK RS485-																											
3	GREEN/WHITE STRIPE	MECHONET+ RS485-																											
4	BLUE SOLID	5V+																											
5	BLUE/WHITE STRIPE	5V+																											
6	GREEN SOLID	MECHONET RS485+																											
7	BROWN/WHITE STRIPE	5V GND																											
8	BROWN SOLID	N/C																											

Warranty

Mecho's warranty ensures its products against defects in materials and workmanship for up to 25 years. The warranty timeline shall vary for different products. For complete warranty information, please visit <https://www.mechoshade.com/warranty> or contact your Mecho® Representative.

Mecho® reserves the right to make improvements or changes to its products without prior notice. Every attempt is made to ensure the information herein is accurate and up to date. Verify with the Mecho® staff to confirm the product's availability, latest specifications, and suitability for your application.

Technical support

Mecho

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W: www.mechoshade.com